

Dr. Engelmann's note on *Eschscholtzia Californica*, in the GAZETTE, reminds me of the broad patches of this plant growing at Santa Cruz on chalky hills. I have seen a mat three feet in diameter growing from one thick root, with plenty of remains of former flowering stems still attached to the plant, showing that it is a perennial as Dr. E. suggests. It is strikingly different from the annual form in Southern Utah, but I doubt its claim to distinctness because of being a perennial.

The base of the petiole of leaves of *Ivesia Kingii* are strikingly hairy, but the hairs are concealed by the decaying remains of the outer leaves. The pubescence is as remarkable as that of *Lygodesmia spinosa*.—MARCUS E. JONES, Salt Lake City.

Notes from a Laboratory.—It is not unwelcome to teachers who have little spare time to know just what plant to give to a student of Vegetable Histology with the certainty that the particular tissue under consideration will be found in such form as to render it desirable for examination. With the object, therefore, of recommending a few common green-house plants, in which illustrative examples of the prominent tissues can be found, the following notes, from the work of the Sophomore class of Purdue University, are presented. Most of this work passed under my personal observation.

Of course every one will (if he be not too forgetful) have a good stock of pumpkin or squash stem to illustrate the dicotyledonous stem, and next spring all of us, by Dr. Bessey's recommendation, will lay in a supply of asparagus for the monocotyledonous one. Other plants are frequently wanted however, and the following to be had from almost any green house or window-garden, will be found useful:

Geranium (sp?)* exhibits an abundance of fine compound crystals in a transverse section of the leaf and a few in petiole and stem. Its starch grains are large and abundant (the plant was just well started from a slip) and the layers of cork-cells are numerous and regular.

Ageratum Mexicanum (Blue Ageratum). Collenchyma well shown.

Primula Sinensis (Primrose) has particularly fine trichomes. The presence of chlorophyll bodies in the epidermis is also a marked feature.

Nerium roseum (Oleander) is peculiar on account of the arrangement of the stomata in groups at the bottom of hairy pits in the under surface of the leaf.

*The specific names, when any are given, cannot be vouched for. They are as given me by our florist. All of the plants can be identified either by the common or generic names.

Cuphea platycentra (Cigar or Match Plant) shows splendid glandular trichomes.

Coleus harlequin shows collenchyma nicely.

Tradescantia, sp? (Wandering Jew) has remarkably regular epidermis on the upper surface of the leaves. In horizontal section it appears made up of almost exactly hexagonal cells. Very long slender trichomes at the nodes.

Pilea pilosa (Artillery plant) was one of the most interesting plants examined. The motion of the protoplasm carrying chlorophyll grains can be easily seen in the parenchyma of the primary cortex. Cystoliths, as in its wild congener, *P. pumila* are of extraordinary size and number, thirteen being counted in a cross-section of a small branch. They are everywhere, leaves and stems being full of them! The epidermal cells of the leaves are also extremely large.

Begonia semperflorens will compare favorably with the pumpkin for a "general purpose" plant. The epidermis is composed of large cells; the collenchyma is beautifully regular; the tracheary tissue is represented by spiral, angular, annular, scalariform and pitted vessels, many of the latter exhibiting the "crossed" pits; the lenticils show a peculiar development of cork; the starch grains are large and both simple and compound crystals are present (Vide Bot. Gaz. VII, 12). Finally the stomata occur in groups of 6-14 and show plainly the successive segmentation of the original epidermal cells to form the mother-cell of the stoma.

There is but one objection to the *Begonia* for general laboratory use and that can be easily overcome. It must be grown especially for the purpose, while any corn-field almost will furnish the standard pumpkin. The ease and rapidity with which it can be grown from cuttings will almost invalidate this objection, and this species seems to be more compact and easily handled than any other. The *Begonia* has several points of superiority over the *Cucurbitaceae*, chiefly in the structure of the fibro-vascular bundle, which is much simpler and easier of comprehension by the average student. Trichomes (except on the root) are absent from this species. This plant in connection with those already in wide use, will be found of very considerable value in laboratory work.—CHAS. R. BARNES, *LaFayette, Ind.*

A Large Red-bud.—I found growing on the hill-side near my house a specimen of the Red-bud, *Cercis Canadensis*, which was about 14 inches in diameter at a point 10 inches above the ground. The trunk was well-formed throughout and free from swellings or knots.—O. M. MEYNCKE, *Brookville, Ind.*